

Operation Odyssey Dawn (Libya): Background and Issues for Congress

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March 30, 2011

Congressional Research Service
7-5700
www.crs.gov
R41725

CRS Report for Congress
Prepared for Members and Committees of Congress

Summary

This report provides an overview of military operations in Libya under U.S. command from March 19 to March 29, 2011, and the most recent developments with respect to the transfer of command of military operations from the United States to NATO on March 30.

The ongoing uprising in Libya against the government of Muammar al Qadhafi has been the subject of evolving domestic and international debate about potential international military intervention, including the proposed establishment of a no-fly zone over Libya. On March 17, 2011, the United Nations Security Council adopted Resolution 1973, establishing a no-fly zone in Libyan airspace, authorizing robust enforcement measures for the arms embargo established by Resolution 1970, and authorizing member states "to take all necessary measures … to protect civilians and civilian populated areas under threat of attack in the Libyan Arab Jamahiriya, including Benghazi, while excluding a foreign occupation force of any form on any part of Libyan territory."

In response, the United States established Operation Odyssey Dawn, the U.S. contribution to a multilateral military effort to enforce a no-fly zone and protect civilians in Libya. Military operations under Odyssey Dawn commenced on March 19, 2011. U.S. and coalition forces quickly established command of the air over Libya's major cities, destroying portions of the Libyan air defense network and attacking pro-Qadhafi forces deemed to pose a threat to civilian populations.

From the outset of operations, the Obama administration declared its intent to transfer command of operations over Libya to a coalition entity. On March 30, 2011, NATO assumed command of all aspects of coalition military operations.

Establishment of the initial no-fly zone over Libya went smoothly. One U.S. aircraft was lost due to mechanical malfunction, but the crew were rescued. Estimates of the cost of the initial operation range between $400 million and $1 billion.

U.S. participation in Operation Odyssey Dawn and NATO operations around Libya raises a number of questions for Congress, including the role of Congress in authorizing the use of force, the costs of the operation, the desired politico-strategic end state, the role of U.S. military forces in an operation under international command, and many others.

(A note on transliteration: The name of Muammar al Qadhafi is transliterated in many ways by various sources. This paper refers to him as Qadhafi except when quoting other documents, wherein his name is represented as it appears in the source.)

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Overview[1]

In the weeks prior to commencement of Operation Odyssey Dawn, the ongoing uprising in Libya against the government of Muammar al Qadhafi was the subject of domestic and international debate about potential international military intervention, including the proposed establishment of a no-fly zone over Libya. On March 17, 2011, the United Nations Security Council adopted Resolution 1973 (UNSCR 1973), establishing a no-fly zone in Libyan airspace, authorizing robust enforcement measures for the arms embargo established by Resolution 1970, and authorizing member states "to take all necessary measures … to protect civilians and civilian populated areas under threat of attack in the Libyan Arab Jamahiriya, including Benghazi, while excluding a foreign occupation force of any form on any part of Libyan territory."

Policy debates in the United States, allied countries, and the Middle East have intensified in parallel with the authorization, launch, and continuation of U.S. and coalition military operations. Third parties, including the U.S. government, have staked out firm political positions demanding Qadhafi's ultimate departure, but opposition forces have yet to demonstrate that they have the capacity to dislodge Qadhafi on their own, and Resolution 1973 calls for an immediate cease-fire and dialogue, which Qadhafi may yet embrace in a bid to stay in power. For the United States, reconciling a long-term objective of regime change with participation in military action to enforce a UN Security Council resolution that does not expressly endorse that goal is a particular challenge. Some observers have warned that the use of force—whether by external parties, Libyan rebels, or some combination of the two—to affect regime change in Tripoli may have unpredictable consequences for the long term stability of the country and the region.

This report provides an overview of military operations under U.S. command from March 19 to March 29, 2011, and the most recent developments with respect to the transfer of command of military operations from the United States to NATO on March 30. For more information on the conflict in Libya, see CRS Report RL33142, *Libya: Unrest and U.S. Policy*, by Christopher M. Blanchard.

Recent Developments: Transfer from U.S. to NATO Command[2]

On March 27, 2011, after just over a week of coalition air operations under U.S. command, the North Atlantic Treaty Organization (NATO) announced that it would take over command and control of all ongoing military operations in Libya. According to NATO Secretary General Anders Fogh Rasmussen, the goal of NATO's Operation Unified Protector is "to protect civilians and civilian-populated areas under threat of attack from the Gaddafi regime." This entails (1) enforcing a UN-mandated arms embargo; (2) enforcing a no-fly zone over Libyan territory; and (3) protecting civilians and civilian population areas from being attacked by military forces from the Qadhafi regime. Operation Unified Protector is commanded by Canadian Air Force Lt. Gen.

[1] This section was prepared by Christopher Blanchard, Acting Section Research Manager, and Jeremiah Gertler, Specialist in Military Aviation.

[2] This section was prepared by Paul Belkin, Analyst in European Affairs.

Charles Bouchard, headquartered at the Allied Joint Force Command in Naples, Italy. He reports to Joint Force Commander U.S. General Samuel J. Locklear III, who in turn reports to NATO Supreme Allied Commander U.S. Admiral James Stavridis (Admiral Stavridis also serves as Commander US European Command). As of March 28, 12 NATO member states, including the United States, had committed military forces to the new NATO mission.[3] (For more details, see "Involvement of NATO, NATO Member States, and Coalition Partners," below.)

Prior to Military Operations: Background, Select Views, and Authorization

Administration Perspectives

President Obama has stated that the United States believes that Muammar al Qadhafi and his government have lost legitimacy and that Qadhafi should relinquish power and leave the country. The President and his Administration took a number of non-military policy steps to achieve that goal, including supporting U.N. Security Council Resolution 1970, which imposes an international arms embargo on Libya and imposes targeted financial and travel sanctions on Qadhafi, some of his family members, and prominent officials of his government.[4] Prior to the adoption of Resolution 1973, the President and U.S. officials emphasized that "all options" have remained under consideration during the current crisis. Insofar as Resolution 1973 "demands the immediate establishment of a cease-fire," it is unclear whether U.S. action in pursuit of its previously stated goal of securing an end to Qadhafi's rule would be compatible with the authorizations set out in the new Resolution.

Prior to the start of military operations in Libya on March 19, civilian defense officials and uniformed military officers discussed the political and operational considerations that were then-shaping the Administration's decision making process with regard to a possible no-fly zone:

- On March 10, 2011, Defense Secretary Gates said, "We are very mindful of opinion in the region, and that's one of the reasons that one of the three central criteria with respect to any action requires strong regional support. I think that a number of [NATO] ministers made clear that we were—we wanted to put ourselves in a position to assist the Arab League, the African Union or the U.N. in this endeavor, and very sensitive to NATO being responsive to those organizations rather than taking an initiative on its own."[5]
- On March 16, U.S. Ambassador to the United Nations Susan Rice indicated publicly for the first time that the Administration supported discussion by the Security Council of further international steps, including a no-fly zone, with

[3] Belgium, Canada, Denmark, France, Italy, the Netherlands, Norway, Spain, and the United Kingdom have all deployed fighter planes to the region. Turkey and Greece have committed naval assets to enforce the UN arms embargo.

[4] United Nations Security Council, SC/10187/Rev. 1, "In Swift, Decisive Action, Security Council Imposes Tough Measures on Libyan Regime, Adopting Resolution 1970 in Wake of Crackdown on Protesters," February 26, 2011, http://www.un.org/News/Press/docs/2011/sc10187.doc.htm, accessed March 18, 2011.

[5] Thomas E. Ricks, "Gates lays out criteria for Libya action," *ForeignPolicy.com/Best Defense blog*, March 10, 2011.

regard to the conflict in Libya. She said, "we need to be prepared to contemplate steps that include, but perhaps [should] go beyond, a no-fly zone at this point, as the situation on the ground has evolved, and as a no-fly zone has inherent limitations in terms of protection of civilians at immediate risk."[6]

- On March 17, 2011, Air Force Chief of Staff General Norton Schwartz "said it would take upwards of a week to establish a no-fly zone and would require U.S. forces to first neutralize Libyan ground to air anti-aircraft sites."[7] General Schwartz added that a no-fly zone itself "would not be sufficient" to reverse recent Libyan government gains against the anti-Qadhafi forces.[8]
- On March 17, Ambassador Rice explained the U.S. vote in favor of Resolution 1973 by stating that the Security Council, "has responded to the Libyan people's cry for help. This Council's purpose is clear: to protect innocent civilians."

President Obama's Remarks on U.S. Military Operations

On March 18, President Obama made a statement on U.S. policy in the wake of the passage of U.N. Security Council Resolution 1973.[9] Passages from that statement included:

> The United States, the United Kingdom, France, and Arab states agree that a cease-fire must be implemented immediately. That means all attacks against civilians must stop. Qaddafi must stop his troops from advancing on Benghazi, pull them back from Ajdabiya, Misrata, and Zawiya, and establish water, electricity and gas supplies to all areas. Humanitarian assistance must be allowed to reach the people of Libya.… Let me be clear, these terms are not negotiable. These terms are not subject to negotiation. If Qaddafi does not comply with the resolution, the international community will impose consequences, and the resolution will be enforced through military action.
>
> Our focus has been clear: protecting innocent civilians within Libya, and holding the Qaddafi regime accountable.
>
> Left unchecked, we have every reason to believe that Qaddafi would commit atrocities against his people. Many thousands could die. A humanitarian crisis would ensue. The entire region could be destabilized, endangering many of our allies and partners. The calls of the Libyan people for help would go unanswered. The democratic values that we stand for would be overrun. Moreover, the words of the international community would be rendered hollow.
>
> … the United States is prepared to act as part of an international coalition.… I have directed Secretary Gates and our military to coordinate their planning, and tomorrow Secretary Clinton will travel to Paris for a meeting with our European allies and Arab partners about the enforcement of Resolution 1973. We will provide the unique capabilities that we can

[6] Remarks by Ambassador Susan E. Rice, U.S. Permanent Representative to the United Nations, at the Security Council Stakeout on Libya, New York, NY, March 16, 2011.

[7] Frank Oliveri, "Top Officer Says 'No-Fly' Zone Over Libya Might Not Help Rebels," *CQ Today Online*, March 17, 2011.

[8] U.S. Congress, Senate Committee on Armed Services, *Hearing on the Proposed Fiscal 2012 and Future Year Defense Authorization Budget Request Related to the Air Force*, 112th Cong., 1st sess., March 17, 2011.

[9] President Barack Obama, Remarks by the President on the Situation in Libya, March 18, 2011. Available at http://www.whitehouse.gov/the-press-office/2011/03/18/remarks-president-situation-libya.

> bring to bear to stop the violence against civilians, including enabling our European allies and Arab partners to effectively enforce a no fly zone.
>
> The United States is not going to deploy ground troops into Libya. And we are not going to use force to go beyond a well-defined goal—specifically, the protection of civilians in Libya.

Qadhafi rejected the conditions laid out in Resolution 1973 and reiterated by President Obama and others. U.S. military operations to enforce Resolution 1973 began on March 19. On March 21, 2011, President Obama wrote to congressional leaders announcing that U.S. military forces had commenced operations in Libya on March 19 "to prevent a humanitarian catastrophe and address the threat posed to international peace and security by the crisis in Libya" and "for the purposes of preparing a no-fly zone."[10] The President stated that the "strikes will be limited in their nature, duration, and scope" and that "their purpose is to support an international coalition as it takes all necessary measures to enforce the terms of U.N. Security Council Resolution 1973." He added that, "United States military efforts are discrete and focused on employing unique U.S. military capabilities to set the conditions for our European allies and Arab partners to carry out the measures authorized by the U.N. Security Council Resolution." President Obama cited his "constitutional authority to conduct U.S. foreign relations and as Commander in Chief and Chief Executive," and stated he was reporting to Congress "to keep the Congress fully informed, consistent with the War Powers Resolution."

Congressional Perspectives

Before operations began, some Members of Congress made statements urging the imposition of a no-fly zone in the case of Libya's uprising, while others have expressed doubt about the utility of such an operation or other military intervention and suggested that the Administration should seek congressional authorization for any use of U.S. armed forces with regard to the Libyan conflict.

- On March 15, 2011, Senator John McCain introduced S.Res. 102, which

 > calls on the President… to recognize the Libyan Transitional National Council, based in Benghazi but representative of Libyan communities across the country, as the sole legitimate governing authority in Libya; …to take immediate steps to implement a "no-fly zone" in Libya with international support; and, …to develop and implement a comprehensive strategy to achieve the stated United States policy objective of Qaddafi leaving power.

- Also on March 15, 2011, Representative Ron Paul and seven co-sponsors introduced H.Con.Res. 31, which "expresses the sense of Congress that the President is required to obtain in advance specific statutory authorization for the use of United States Armed Forces in response to civil unrest in Libya." The resolution specifically notes the possible imposition of a no-fly zone as one of the possible actions that inspired the legislation.

- Senator Richard Lugar released a statement on March 15 that read, "It is doubtful that U.S. interests would be served by imposing a no-fly zone over Libya. If the Obama Administration is contemplating this step, however, it should begin by

[10] President Barack Obama, Letter from the President Regarding the Commencement of Operations in Libya, March 21, 2011. Available at http://www.whitehouse.gov/the-press-office/2011/03/21/letter-president-regarding-commencement-operations-libya.

seeking a declaration of war against Libya that would allow for a full Congressional debate on the issue."

- On March 16, Senator John Kerry said,

 The international community cannot simply watch from the sidelines as this quest for democracy is met with violence. The Arab League's call for a UN no-fly zone over Libya is an unprecedented signal that the old rules of impunity for autocratic leaders no longer stand. Time is running out for the Libyan people. The world needs to respond immediately to avert a humanitarian disaster. The Security Council should act now to heed the Arab League's call. (see "International Involvement" below)

- Debate within the Senate Foreign Relations Committee at a March 17 hearing on the Middle East revealed differences of opinion among committee members and between some Senators and the Administration with regard to the imperative to intervene; the likely benefits and drawbacks of intervention, including through the establishment of a no-fly zone; the need for congressional authorization for the use of U.S. military forces; and the likelihood that Al Qaeda or other violent Islamists could take advantage of the current situation or future unrest to threaten Libyan and international security.

International Involvement

United Nations Authorization

United Nations Security Council Resolution 1970, adopted on February 26, 2011, did not authorize the use of force by member states with regard to the conflict in Libya or the enforcement of the arms embargo established by the resolution. As such, debate from February 26 through March 17 focused on the need for military intervention and the potential for further authorization from the Security Council.

On March 17, the Security Council adopted Resolution 1973, which, among other things,

- demands the immediate establishment of a cease-fire and a complete end to violence and all attacks against, and abuses of, civilians;
- authorizes Member States that have notified the Secretary-General, acting nationally or through regional organizations or arrangements, and acting in cooperation with the Secretary-General, to take all necessary measures, notwithstanding paragraph 9 of resolution 1970 (2011) [Note: paragraph 9 establishes an arms embargo on Libya], to protect civilians and civilian populated areas under threat of attack in the Libyan Arab Jamahiriya, including Benghazi, while excluding a foreign occupation force of any form on any part of Libyan territory;
- establishes a ban on all flights in the airspace of the Libyan Arab Jamahiriya in order to help protect civilians;
- authorizes robust enforcement inspection measures for the arms embargo established by Resolution 1970, including measures to prevent the movement of mercenary forces to Libya; and

- calls on member states to enforce a ban on flights by any aircraft registered in the Libyan Arab Jamahiriya or owned or operated by Libyan nationals or companies.

The no-fly zone provisions of Resolution 1973 ban "all flights in the airspace of the Libyan Arab Jamahiriya in order to help protect civilians" with the exception of humanitarian flights, evacuation flights, flights authorized for the protection of civilians, and "other flights which are deemed necessary by States acting under the authorization …to be for the benefit of the Libyan people." Member states are authorized to act nationally or "through regional organizations." All authorized flights are to be coordinated with the U.N. Secretary General and the Arab League Secretary General. The resolution calls on member states "to provide assistance, including any necessary over-flight approvals, for the purposes of implementing" the no-fly zone and civilian protection operations.

After the resolution was passed, it was not immediately clear what steps the United States or others were prepared to take to enforce the no-fly zone or civilian protection provisions of Resolution 1973, amid claims from Qadhafi and Libyan opposition figures that their confrontation in and around the eastern city of Benghazi could be reaching a decisive point. Libyan officials replied to the Security Council action by stating, "Any foreign military act against Libya will expose all air and maritime traffic in the Mediterranean Sea to danger and civilian and military [facilities] will become targets of Libya's counter-attack."[11]

The Arab League

The adoption of Resolution 1973 by the Security Council followed a flurry of international activity and diplomacy addressing the subject of potential military intervention generally and a no-fly zone specifically. On March 12, 2011, the Council of the League of Arab States met to discuss the situation in Libya and endorsed on a consensus basis a request to the U.N. Security Council:

> to take measures to impose a no-fly zone over the movement of Libyan military planes immediately, and to establish safe areas in the places exposed to shelling as preventive measures allowing to provide protection for the Libyan people and the residents in Libya from different nationalities, taking into account the regional sovereignty and integrity of neighboring countries.[12]

The Arab League statement was welcomed by international observers who view regional support as a prerequisite for any direct intervention, including any multilateral military operation to impose a no-fly zone. The U.S. government referred to the decision as "important." Some observers in the region who had expressed concern that third parties, including the United States, had not provided sufficient support to the Libyan opposition strongly supported the Arab League statement. Other observers cautioned that the apparent consensus at the Arab League meeting may have masked underlying dissension among regional governments with regard to specific types of military intervention and strong opposition to any foreign military intervention among some regional citizens.[13] Those concerns appeared to be borne out when coalition military strikes

[11] Reuters, "UN Security Council authorizes no-fly zone over Libya," March 18, 2011.

[12] OSC Report GMP20110314950010, "Arab League Urges U.N. to Impose No-Fly Zone Over Libya," March 12, 2011.

[13] There are conflicting reports from unnamed Arab official sources that some governments opposed the decision. On March 17, Algerian diplomats informed CRS that their government did not oppose the Arab League Council decision, (continued...)

against Libyan ground forces drew criticism from some Arab leaders after the start of operations on March 19, 2011. Resolution 1973 recognizes "the important role of the League of Arab States in matters relating to the maintenance of international peace and security in the region," and requests that the member states of the Arab League "cooperate with other Member States in the implementation of" measures taken pursuant to the resolution to protect Libyan civilians. The Obama Administration is seeking "active Arab partnership, both in the measures that would be taken but also in the financial support for them."[14] Some Arab League members states have made contributions to coalition military efforts since the start of operations to enforce Resolution 1973 (see "Non-NATO Coalition Partners," below).

U.S-Led Military Operations—Operation Odyssey Dawn[15]

Following passage of UNSCR 1973, on March 19, 2011, U.S. and allied forces established an initial no-fly zone over major cities and air bases near the Libyan coast, as shown in **Figure 1**. The first offensive operations were carried out by French aircraft striking armored units near Benghazi (see more detail under "France—*Operation Harmattan*" below.)

The no-fly operation was enabled by a strike against Libyan air-defense assets and other targets using 110 Tomahawk and Tactical Tomahawk cruise missiles and strikes by three B-2 Spirit bombers delivering 45 Joint Direct Attack Munitions (JDAMs) against Libyan air bases. [16] Tomahawks were also fired from British ships in the area, and British Tornado GR4 aircraft flying from the Royal Air Force base at Marham, England, reportedly employed Storm Shadow cruise missiles.[17]

(...continued)

contrary to some press reports. Algeria has urged coordination with the African Union, stressed that any no-fly zone decision must be taken by the U.N. Security Council, and maintains its general "opposition to any foreign intervention in Libya," a position it maintained with regard to uprising in Tunisia and Egypt. Syria's representative also is rumored to have expressed reservations about the decision and has warned against foreign intervention in Libya.

[14] Testimony of Undersecretary of State William Burns, before the Senate Foreign Relations Committee, March 17, 2011.

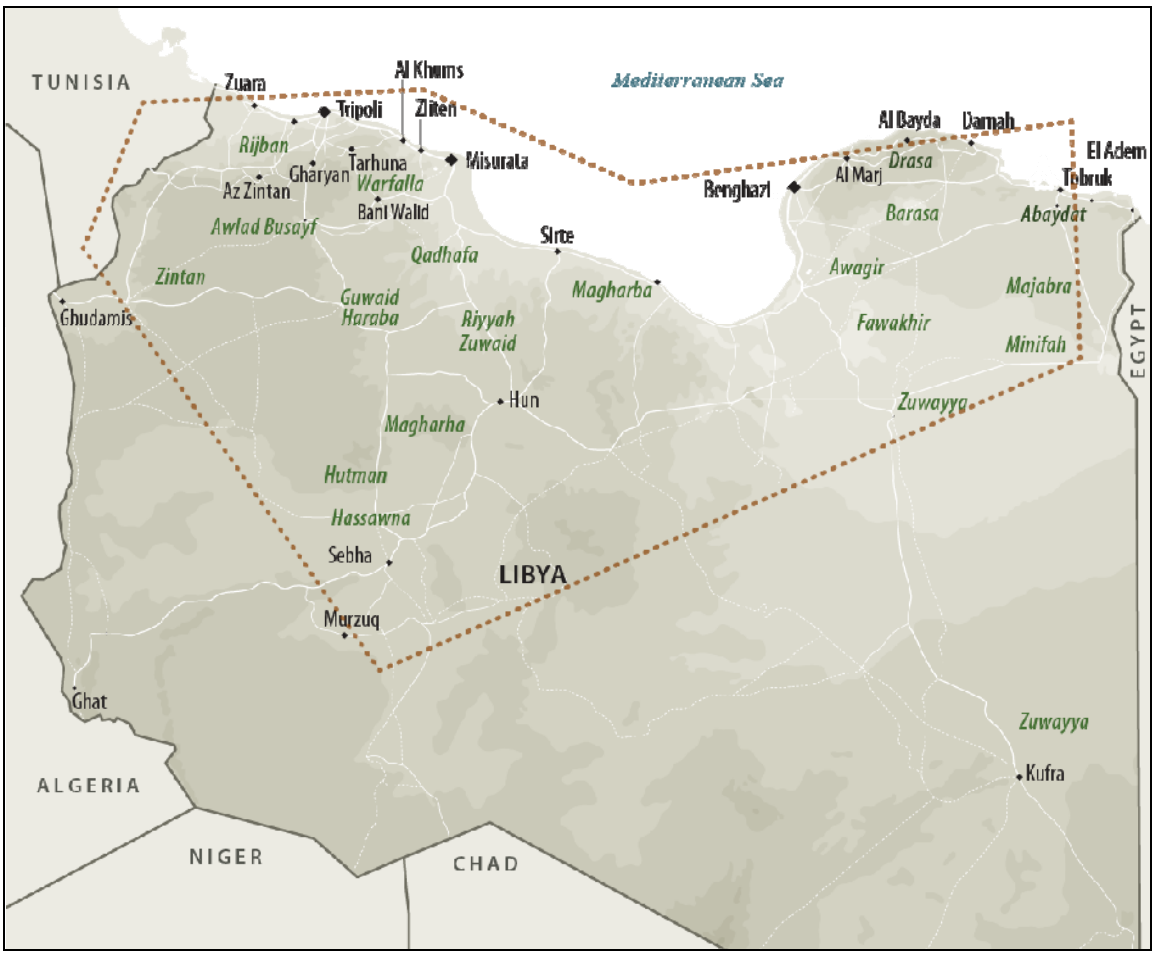
[15] This section was prepared by Jeremiah Gertler, Specialist in Military Aviation.

[16] DOD press briefing by Vice Admiral Bill Gortney, Director of the Joint Staff, March 19, 2011.

[17] "The Weapons We're Hitting Gadhafi With," *DefenseTech.org*, March 20, 2011.

Figure 1. Initial No-Fly Zone

As of March 19, 2011



Source: DOD, edited by CRS.

Notes: Locations are approximate.

By March 23, 2011, the no-fly zone had expanded to cover the entire Libyan coastline "boundary to boundary," including Tripoli, and offensive operations were under way against Libyan ground forces observed to pose a threat to civilian populations. However, there was "no indication that Qadafi's forces are pulling back from Misrata or Ajdabiya."[18]

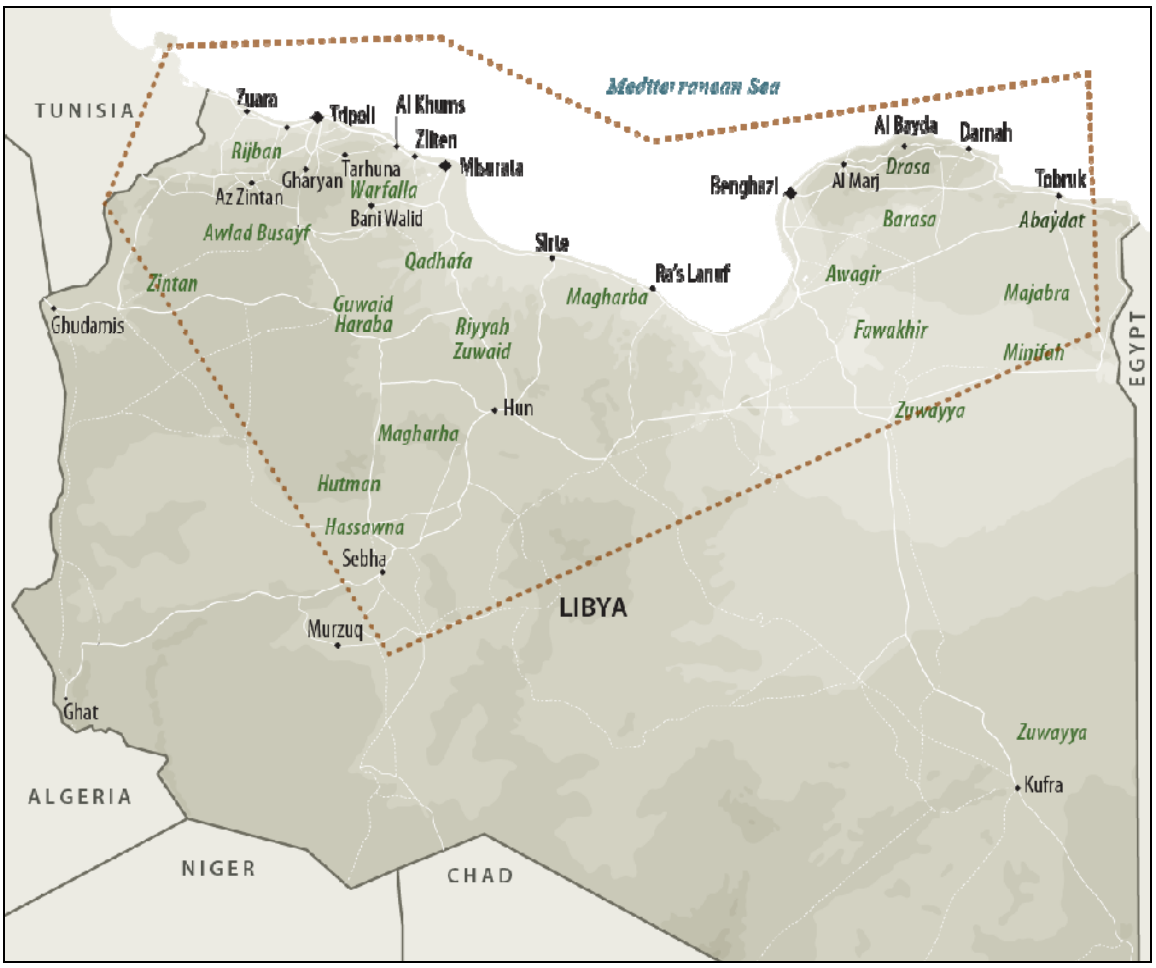
On March 28, 2011, DOD announced that A-10 and AC-130 aircraft had begun operations over Libya on March 26. The A-10 is optimized to destroy armored vehicles, while the AC-130 provide close air support and air interdiction. Introduction of these systems increases U.S. capability to counter Libyan ground forces.[19]

[18] DOD press briefing by Rear Admirlal Gerald Hueber, March 23, 2011.

[19] DOD press briefing by Vice Admiral Bill Gortney, Director of the Joint Staff, March 28, 2011.

Figure 2. Expanded No-Fly Zone

As of March 24, 2011



Source: DOD, edited by CRS.

Notes: Locations are approximate.

Operational considerations influencing the scope of Operation Odyssey Dawn include:

Libyan Air Defenses

On March 1, Gen. James Mattis, Commander, U.S. Central Command, responded to questions about what type of military operation would be required to establish a no-fly zone by saying:

> You would have to remove the air defense capability, in order to establish the no-fly zone. So it—no illusions here, it would be a military operation. It wouldn't simply be telling people not to fly airplanes.[20]

[20] Gen. James N. Mattis, commander, U.S. Central Command, in John Vandiver and Geoff Ziezulewicz, "No-fly zone over Libya: The facts," *Stars & Stripes*, March 1, 2011.

Libya's air defense system relied on Soviet and Russian systems, most 20-30 years old and at least two generations behind current surface-to-air missile (SAM) technology. Defenses were reportedly focused on Libya's seacoast, which also covers the capital, Tripoli; Benghazi; and Libya's major oil ports.[21] Although it was possible to observe the disposition of radars and missile sites, the condition and effectiveness of the communications, command and control network linking those sites has proven more difficult to determine.[22] Also, some of the SAM sites are in areas now controlled by the anti-Qadhafi forces, and have not been available to the government.

As of March 22, coalition operations had "rendered Gadhafi's long-range air defenses and his air force largely ineffective."[23]

Libyan Air Assets

The Chief of Staff of the U.S. Air Force estimates that prior to the initiation of Operation Odyssey Dawn, the Libyan air force possessed "multiple tens of combat aircraft," flying only "tens of sorties a day."[24] Although Libya's 10 major air bases notionally house about 180 fighter and attack aircraft and just over 100 helicopters,[25] most are believed inoperable. As Libyan pilots are believed to average only 85 flight hours per year, about half the flight time of coalition air forces, even those aircraft which are operational may not be flown effectively. [26] Libya's aircraft are also rather antiquated, mostly Soviet-era fighters with a few more modern French Mirage jets. On February 21, 2011, two Libyan Air Force colonels flew two of the Mirages to Malta, where they were interned.[27]

As of March 23, 2011, Libya's air force remained grounded. A DOD briefer stated that there had been "no confirmed flight activity by regime forces over the last 24 hours."[28] On March 24, one Libyan jet reportedly flew a mission near Misrata, but was destroyed upon landing by a French fighter.[29] No further Libyan air operations were reported through March 27.

Geography

As noted, most of Libya's major urban centers, as well as its air defense assets, are located along the Mediterranean coast. This has allowed carrier-based and other naval forces to operate in

[21] Sean O'Connor, "The Libyan SAM Network," *IMINT & Analysis blog*, May 11, 2010.

[22] For comparison, the Libyan system is older and less sophisticated than the Iraqi air defense network that was neutralized by U.S. and allied forces early in Operation Desert Storm.

[23] Adm. Samuel J. Locklear III, press briefing, March 22, 2011.

[24] Gen. Norton Schwartz, in testimony before the U.S. Congress, Senate Committee on Armed Services, *Testimony on the Department of the Air Force in review of the Defense Authorization*, 112th Cong., March 17, 2011.

[25] International Institute for Strategic Studies, "Chapter Seven: Middle East and North Africa," in *The Military Balance 2011*, 111th ed. (London: Brassey's, 2011).

[26] Ibid.

[27] "Malta refusing to return Libyan fighter jets, says it denied landing to plane carrying pilots," *Canadian Press*, March 1, 2011.

[28] DOD press briefing by Rear Admirlal Gerald Hueber, March 23, 2011.

[29] Martha Raddatz, Alexander Marquardt and Luis Martinez, "Gadhafi's Warplane Shot Down by French Fighter Jets in Misrata," *ABCNews.com*, March 24, 2011.

establishing and enforcing a no-fly zone. The four main Libyan air bases are also located near the coast. [30]

Libya borders on Chad, Sudan, Niger, Tunisia, Algeria, and Egypt. However, the most compatible sites to base U.S. forces are across the Mediterranean—Sigonella, Sicily and Souda Bay, Crete. The United States has operated from both bases in the past, and maintains a presence at Sigonella.

> Italy also has cleared partners to base their assets at a variety of facilities, including Gioia del Colle and Amendola in Puglia, Aviano in northeastern Italy, Trapani and Sigonella in Sicily, and Decimomannu in Sardinia. Other bases could be used as many additional allied aircraft are reaching Italy. The NATO CAOC in Poggio Renatico is also fully operational, with other C4I installations heavily involved.[31]

Concept of Operations

As implemented, operations in Operation Odyssey Dawn included strikes on "mechanized forces, artillery…those mobile surface-to-air missile sites, interdicting their lines of communications which supply their beans and their bullets, their command and control and any opportunities for sustainment of that activity" when forces were "attacking civilian populations and cities." [32]

In testimony before the House Armed Services Committee, Marine Corps Commandant General James F. Amos recently called Libya's helicopter forces the "greatest threat" to anti-Qadhafi forces.[33] This would suggest that simply enforcing caps over the main Libyan air bases to suppress fixed-wing flights would not be sufficient to eliminate the main Libyan air threat, and could require operations throughout Libya's airspace. As previously noted, this would be a more complex operation than simply monitoring fixed air bases. Paragraph 11 of Resolution 1973 "decides that the Member States concerned shall inform the Secretary-General and the Secretary-General of the League of Arab States immediately of measures taken in exercise of the [no-fly zone] authority…including to supply a concept of operations."

U.S. Assets Involved in Operation Odyssey Dawn

U.S. Air Force units participating in Operation Odyssey Dawn include:[34]

- B-2 stealth bombers from the 509th Bomb Wing at Whiteman Air Force Base, MO
- F-15Es from the 492nd Fighter Squadron and 494th Fighter Squadron at RAF Lakenheath, Britain

[30] General James F. Amos, in testimony before the U.S. Congress, House Committee on Armed Services, *Testimony on the Department of the Navy in review of the Defense Authorization,* 112th Cong., March 1, 2011.

[31] Andy Nativi, "Italy: Doing More than Playing Host for Libyan Operations," *AviationWeek/Ares blog*, March 21, 2011.

[32] DOD press briefing by Rear Admirlal Gerald Hueber, March 23, 2011.

[33] Ibid.

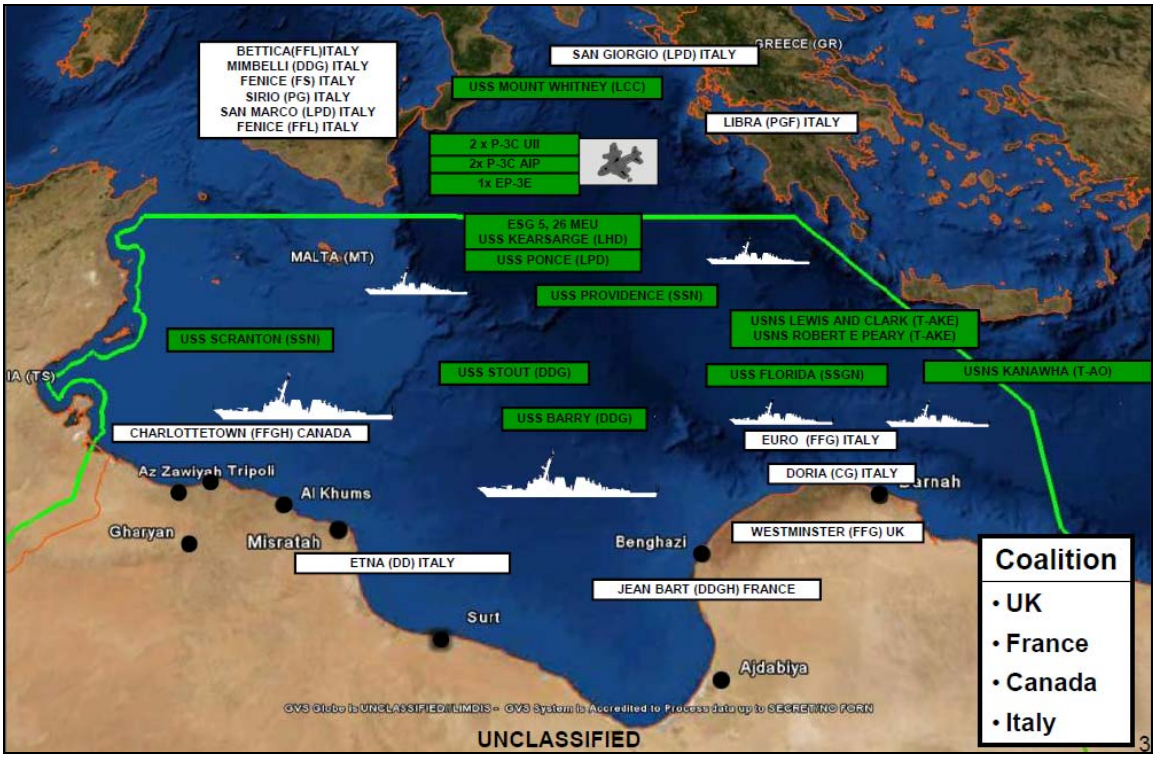
[34] John A. Tirpak, "Odyssey Dawn Units Identified," *Air Force Association Daily Report*, March 22, 2011, "Fairchild tankers handle Libya refueling duties," *Associated Press*, March 22, 2011, and DOD press briefing by Vice Admiral Bill Gortney, Director of the Joint Staff, March 28, 2011.

- F-16CJ defense-suppression aircraft from the 480th Fighter Squadron at Spangdahlem Air Base, Germany
- EC-130 Commando Solo psychological operations aircraft from the 193rd Special Operations Wing, Pennsylvania Air National Guard, Middletown, PA
- KC-135s of the 100th Air Refueling Wing at RAF Mildenhall, Britain and the 92nd Air Refueling Wing, Fairchild AFB, WA
- C-130Js from the 37th Airlift Squadron at Ramstein Air Base, Germany
- A-10 attack fighters
- AC-130 gunships

As part of a 25-hour round trip mission, the B-2s struck combat aircraft shelters at Ghardabiya Airfield in the opening hours of Operation Odyssey Dawn. The F-15Es and F-16CJs attacked ground forces loyal to Qadhafi that were advancing on opposition forces in Benghazi and threatening civilians. KC-135s refueled the strike aircraft en route to an unnamed forward air base, and the C-130Js moved ground equipment and personnel to that forward base, as did theater-based C-17s.[35]

Figure 3. Maritime Assets in Operation Odyssey Dawn

As of initiation of operations, March 19, 2011



Source: DOD.

[35] John A. Tirpak, "Odyssey Dawn Units Identified," *Air Force Association Daily Report*, March 22, 2011.

U.S. Navy ships involved in Operation Odyssey Dawn include: [36]

- Arleigh Burke-class guided-missile destroyers USS Stout (DDG 55) and USS Barry (DDG 52)
- Submarines USS Providence (SSN 719), USS Scranton (SSN 756) and USS Florida (SSGN 728)
- Marine amphibious ships USS Kearsarge (LHD 3) and USS Ponce (LPD 15)
- Command ship USS Mount Whitney (LCC/JCC 20)
- Support ships Lewis and Clark, Robert E. Peary and Kanawha.

Naval and Marine aviation assets include:

- AV-8B Harrier fighters, CH-53 Super Stallion helicopters and MV-22 Osprey tiltrotor aircraft aboard the Kearsarge and Ponce[37]
- KC-130J tanker aircraft flying from Sigonella Air Base, Italy[38]
- EA-18G Growler electronic attack aircraft of VAQ-132, based at Whidbey Island, WA and flying from Aviano Air Base, Italy. These aircraft were diverted from Iraq to support Operation Odyssey Dawn.[39]
- P-3 Orion sub-hunters and EP-3 Aries electronic attack aircraft[40]

Command Structure

The United States took initial operational command of coalition operations to enforce United Nations Security Council Resolution (UNSCR) 1973, with the goal of subsequently transitioning leadership to a coalition commander.[41]

Army General Carter F. Ham, who assumed command of U.S. Africa Command (AFRICOM) on March 9, served as theater commander for the operation.

[36] DOD press briefing by Vice Admiral Bill Gortney, Director of the Joint Staff, March 19, 2011 and "The Weapons We're Hitting Gadhafi With," *DefenseTech.org*, March 20, 2011.

[37] 26th Marine Expeditionary Unit, "26th MEU rescues U.S. Air Force pilots after plane crash," undated press release.

[38] Ibid.

[39] Christian Lowe, "Growlers Over Libya—An Update," *DefenseTech.org*, March 23, 2011 and Marina Malenic, "Navy EW Plane Makes Combat Debut Over Libya," *Defense Daily*, March 24, 2011.

[40] "Global Hawk Drone and E-8 JSTARS May Be Helping the Libya Fight," *DefenseTech.org*, March 22, 2011.

[41] DOD press briefing by Vice Admiral Bill Gortney, Director of the Joint Staff, March 19, 2011.

U.S. Africa Command[42]

The U.S. military's newest combatant command, U.S. Africa Command (AFRICOM), which reached full operational capability in October 2008, has taken the lead on Operation Odyssey Dawn.

AFRICOM has also supported the U.S. response to the evolving humanitarian emergency in Libya through the delivery of relief supplies and evacuation of foreign nationals fleeing the violence into neighboring Tunisia.

As envisioned by the Department of Defense (DOD), AFRICOM aims to promote U.S. strategic objectives by working with African states and regional organizations to help strengthen regional stability and security through improved security capability and military professionalization. If directed by national command authorities, its military operations would aim to deter aggression and respond to crises. In March 2011, AFRICOM commenced Operation Odyssey Dawn to protect civilians in Libya as part of a multinational military operation authorized by the U.N. Security Council under Resolution 1973.

Although the precise wording of AFRICOM's mission statement has evolved since the command was first announced, DOD officials have broadly suggested that the command's mission is to promote U.S. strategic objectives by working with African partners to help strengthen stability and security in the region through improved security capability and military professionalization. A key aspect of the command's mission is its supporting role to other agencies and departments efforts on the continent. But like other combatant commands, AFRICOM is expected to oversee military operations, when directed, to deter aggression and respond to crises.

Tactical operations were coordinated by a Joint Task Force under Admiral Samuel J. Locklear III onboard the command and control ship USS Mount Whitney. Locklear serves jointly as Commander of U.S. Naval Forces Europe and Africa, and as Commander of Allied Joint Force Command, Naples, which has operational responsibility for NATO missions in the Mediterranean. UK and French naval officers are onboard the Mount Whitney, as well as liaison officers from a number of other countries.[43]

Air Force Maj. Gen. Margaret Woodward, commander of 17th Air Force, was the initial Joint Force Air Component Commander for Operation Odyssey Dawn.

Figure 4. U.S. Commanders



Ham


Locklear


Woodward

[42] This section was prepared by Lauren Ploch, Analyst in African Affairs.

[43] DOD press briefing by Admiral Samuel J. Locklear III, commander, Joint Task Force Odyssey Dawn, March 22, 2011.

The coalition currently includes forces from 13 nations either already in the region or en route. As of March 24, 2011, non-U.S. coalition aircraft were flying "65 percent" of all sorties, up from 13% on March 20. [44] [45]

Involvement of NATO, NATO Member States, and Coalition Partners[46]

France and the United Kingdom (UK) have been the most vocal proponents of taking action against Qadhafi to protect civilians in Libya—the two countries sponsored UNSC Resolutions 1970 and 1973, and pushed the European Union to quickly adopt sanctions against the Qadhafi regime. They have also played a central role in the ongoing military operations in Libya. Within a week after passage of UNSCR 1970, both French President Nicolas Sarkozy and British Prime Minister David Cameron had publicly called on Qadhafi to relinquish power and each had instructed their respective military leadership to begin working with allies on plans for a no-fly zone over Libya.[47] On March 10, France became the first and only country to recognize the Libyan Transitional National Council "as the legitimate representative of the Libyan people."[48]

On Saturday, March 19, two days after passage of UNSCR 1973, President Sarkozy convened an emergency meeting of allied and Arab leaders in Paris which endorsed the immediate deployment of military aircraft to stop an assault by Qadhafi forces on Benghazi and the establishment of a no-fly zone in the country.[49] Before the end of the meeting, French fighter planes had attacked armored vehicles and tanks belonging to Qadhafi forces on the outskirts of Benghazi. Some participants at the Paris meeting were reportedly critical of the French government both for insisting on convening the meeting before agreeing to endorse air strikes and for then launching strikes before the meeting was over.[50] French officials claim that meeting participants were informed of the operation and argue that the assaults were necessary to prevent an imminent attack on Benghazi. In any case, the strikes had clearly been planned and coordinated with the knowledge of key allied militaries, including the United States and UK. French officials add that the meeting was essential to maintaining coalition unity and Arab League support for military operations and for securing the participation of some Arab governments in the enforcement of UNSCR 1973.

[44] Admiral James Stavridis, Supreme Allied Commander Europe, quoted in John T. Bennett, "Lawmakers worry about Libya's costs," *The Hill*, March 30, 2011.

[45] DOD press briefing by Rear Admiral Gerald Hueber, March 23, 2011.

[46] This section was prepared by Paul Belkin, Analyst in European Affairs, and Derek E. Mix, Analyst in European Affairs.

[47] "Sarkozy: Gaddafi must step down," PressTV, February 25, 2011; Ian Black, "World sends message to Gaddafi: it is time to end your regime," *The Guardian*, February 28, 2011; interviews of French officials, March 2011.

[48] See "Sarkozy's Libyan Surprise," *The Economist*, March 14, 2011.

[49] In addition to Secretary of State Hillary Rodham Clinton, the meeting was attended by the prime ministers or foreign ministers of Belgium, Canada, Denmark, France, Germany, Italy, Morocco, Norway, Poland, Qatar, Spain, the United Arab Emirates, and the UK, as well as representatives of the Arab League, the EU, and the UN.

[50] See, for example, David Kirkpatrick et. al., "Allies Open Air Assault on Qaddafi's Forces in Libya," *New York Times*, March 19, 2011.

Only the United States and NATO possess the command and control capabilities necessary for coalition operations enforcing the no-fly zone over Libya and protecting civilians on the ground.

In spite of statements underscoring NATO unity on steps announced to date, the initial planning and operational phases were also marked by significant levels of discord within Europe and NATO on the aims and future direction of the mission. A key point of contention was reportedly the amount of flexibility that NATO forces would be granted to protect civilians and civilian areas, as called for in paragraph 4 of UNSCR 1973. Reports indicate that French officials insisted on maintaining the ability to strike ground forces that threatened civilian areas, while their Turkish counterparts vocally opposed any targeting of ground forces.[51] Adding to the strain within NATO, NATO ally Germany abstained from UNSCR 1973 and, opposed to any potential combat operation, on March 23, withdrew its naval assets in the Mediterranean from NATO command.[52] Throughout the first week of operations, other European allies contributing to the mission, including Italy and Norway, expressed increasing frustration with the lack of agreement within NATO, with Norway refusing to deploy its fighter jets unless under they were under NATO command and control. Although the allies appear to have come to agreement on the terms of their military engagement moving forward, some of the aforementioned tensions could reemerge over the course of the mission.

France, along with other allies, has expressed concern that a NATO-led mission in Libya could lead to heightened criticism of western motives in the region. Among other things, they have argued that skepticism of U.S. motives and public perception of NATO as a U.S.-dominated alliance could erode support for the mission within Arab countries. Accordingly, French and other allied officials have consistently emphasized the importance of maintaining Arab endorsement of, and involvement in, the ongoing military operations as well as diplomatic efforts to broker a cease fire and possible transfer of power in Libya. To this end, on March 29, NATO and other partner countries participating in the NATO mission announced the establishment of the Libya Contact Group, tasked with providing "leadership and overall political direction to the international effort in close coordination with the UN, AU, Arab League, OIC, and EU to support Libya; provide a forum for coordinating the international response on Libya; and provide a focal point in the international community for contact with the Libyan parties."[53] NATO's North Atlantic Council will continue to provide executive political direction to NATO military operations.

NATO—Operation Unified Protector

The decision to bring coalition military operations under NATO command and control capped several weeks of increasing allied involvement in the mission. Since March 8, NATO has been

[51] See, for example, Ian Traynor and Nicholas Watt, "Libya no-fly zone leadership squabbles continue within NATO," *The Guardian*, March 23, 2011; and "Still No Decision Who Will Oversee Libya Strikes," Agence France-Presse, March 22, 2011.

[52] On March 28, German officials reportedly signaled that at least two German navy vessels would be placed back under NATO command, but would not be available for use in Operation Unified Protector. The vessels will continue to participate in Operation Active Endeavor. Also, on March 25, in what was portrayed as an effort to ease the allied burden in other NATO operations, the German parliament authorized German forces to take over command of AWACS surveillance operations in Afghanistan with a deployment of up to 300 additional military personnel to the country.

[53] UK Foreign Secretary William Hague statement following the London Conference on Libya, March 29, 2011 http://www.fco.gov.uk/en/news/latest-news/?view=News&id=575592482

conducting 24-hour air surveillance of Libyan territory and the Central Mediterranean, using AWACS aircraft deployed as part of NATO's Operation Active Endeavor, NATO's longstanding counterterrorism and maritime security operation in the Mediterranean Sea.[54]

On March 23, NATO launched a maritime operation to enforce the arms embargo against the Libyan regime. Naval vessels and aircraft participating in the operation are charged with monitoring the Central Mediterranean off the Libyan coast and, if necessary, interdicting any vessels suspected of carrying illegal arms or mercenaries in violation of the arms embargo. As a last resort, NATO vessels are empowered to use force in fulfilling their mission. NATO assets will not enter Libyan territorial waters. NATO officials report that as of March 24, 10 allies (Belgium, Canada, Denmark, Greece, Italy, the Netherlands, Spain, Turkey, the UK, and the United States) had pledged more than 25 ships and submarines and over 50 fighter jets and surveillance planes to enforce the arms embargo.[55] The maritime operation will be commanded by Italian Vice Admiral Rinaldo Veri, Commander of Maritime Command Naples.

On March 24, the allies agreed to take command of air operations to enforce the no-fly zone over Libya. The first no-fly zone missions under NATO command began on Sunday, March 27. No-fly zone and other air operations will be controlled from Allied Air Component Command in Izmir, Turkey, commanded by U.S. Lt. Gen. Ralph J. Jodice II.

Finally, also on March 27, NATO Secretary General Anders Fogh Rasmussen announced that NATO would expand the scope of its mission to include implementing all military aspects of UNSCR 1973, including the protection of civilians and civilian areas through possible air strikes on ground forces loyal to Qadhafi. This is the most controversial aspect of the new NATO mission. Although rules of engagement for the operation are not made publicly available, some participating governments are reported to be prohibiting their air assets from participating in any attacks on ground forces.

France—*Operation Harmattan*[56]

In conjunction with U.S. Operation Odyssey Dawn and British Operation Ellamy (discussed below), French military operations against Qadhafi's forces were launched on March 19 under the codename Operation Harmattan. French fighter jets have been heavily involved both in establishing and maintaining a no-fly zone over Libyan territory and in attacking Qaddafi ground forces. France began the allied operations on the morning of March 19, with the aforementioned attack on armored vehicles and tanks on the outskirts of Benghazi. According to the French Ministry of Defense, during each of the first three days of operations approximately 20 French fighter jets were deployed in Libyan airspace, conducting more than 55 sorties, during which five armored vehicles were "neutralized."[57] After initially focusing operations in coastal areas of

[54] For more information on NATO's Operation Active Endeavor see http://www.nato.int/cps/en/natolive/topics_7932.htm.

[55] NATO Fact Sheet, *NATO Arms Embargo against Libya Operation Unified Protector*, March 25, 2011 http://www.nato.int/nato_static/assets/pdf/pdf_2011_03/20110325_110325-unified-protector-factsheet.pdf; NATO Press Briefing with Brigadier General Pierre St-Amand, Canadian Air Force and General Massimo Panizzi, spokesperson of the Chairman of the Military Committee, March 23, 2011, http://www.nato.int/cps/en/SID-83A5384E-C37D94AC/natolive/opinions_71716.htm?selectedLocale=en.

[56] A harmattan is a "hot, dry wind that blows from the northeast or east in the western Sahara." "Harmattan," in *Encyclopedia Britannica Online.*

[57] French Ministry of Defense, "*Libye: point de situation de l'operation Harmattan #3*," http://www.defense.gouv.fr/ (continued...)

eastern Libya, on March 24 French planes reportedly hit a Libyan air base about 250 kilometers (155 miles) south of the Libyan coastline. Also on March 24, an air-to-ground missile fired from a French Rafale fighter jet is reported to have hit a Libyan plane that had just landed in the western city of Misrata. The plane had reportedly been flying in breach of the no-fly-zone. French officials report that their fighters are now flying between 150 and 200 sorties each day.

French military assets deployed in the theater of operations consist primarily of approximately 20 combat aircraft—Rafale and Mirage fighter planes—operating out of Solenzara, Corsica, and the aircraft carrier Charles de Gaulle, which carries an additional 26 aircraft, including 16 fighter jets. Along with the Charles de Gaulle, at least four French frigates are reportedly present off the Libyan coast.

President Sarkozy has made a concerted effort to play a leading role both in ongoing military operations in Libya and in the continuing political deliberations about the future of the mission. As mentioned, France was the first—and remains the only—country to afford diplomatic recognition to the Libyan Transitional National Council, Paris hosted the first international conference on Libya's future, and French fighter jets were the first to launch attacks on Libyan ground forces. Sarkozy, whose popularity at home has reached a low-point in recent months, appears to enjoy the support of a wide majority of the French public for his handling of the situation in Libya.[58]

United Kingdom—*Operation Ellamy*[59]

British military operations against Qadhafi's forces were launched on March 19 under the codename Operation Ellamy. The Royal Navy submarine HMS Triumph participated in the first wave of missile launches against Libyan targets, and reportedly fired approximately 12 Tomahawks in the first three days of the operation. A contingent of Tornado GR4 attack aircraft based in eastern England also took part in the first stages of the assault, making a roundtrip of more than 3,000 miles on March 19-20 to strike targets in Libya. A second long-range Tornado mission, reportedly targeting Qadhafi's presidential compound on the night of March 20, was aborted after late reports of civilians in the target area.

UK airpower deployed in the theatre of operations now consists of two main groups. A detachment of ten Eurofighter Typhoons and a number of Tornados have reportedly deployed to Italy's Gioia del Colle air base, forming the 906 Expeditionary Air Wing. The Typhoons' participation in patrolling and enforcing the no-fly zone marks the aircraft's first ever combat missions. Supporting these combat aircraft is the 907 Expeditionary Air Wing, based at RAF Akrotiri airbase on Cyprus, reportedly consisting of VC-10 tanker aircraft, Nimrod and Sentinel surveillance and reconnaissance planes, E-3D AWACS, and C-17 and C-130 transports. In

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operations/autres-operations/operation-harmattan-libye/actualites.

[58] Karen DeYoung and Edward Cody, "On Libya, France's president steps forward to assume spotlight," *Washington Post*, March 25, 2011.

[59] "Ellamy" is a name "randomly generated by a computer programme." "Libya: What do the military operation names mean?," *BBC online*, March 24, 2011.

addition to the Royal Navy submarine, two UK frigates (HMS Cumberland and HMS Westminster) are also present in the Mediterranean waters off the coast of Libya.[60]

A motion in the British parliament's House of Commons supporting the government's action with regard to Libya passed by the overwhelming margin of 557 to 13 on March 21. With approximately 10,000 British troops already deployed in operations in Afghanistan, however, Members of Parliament have expressed serious concerns about the potential scope and duration of this new commitment. As the UK government continues to implement budgetary austerity in order to reduce its budget deficit, there are also concerns about the cost of the Libya operation. *The Daily Telegraph* reported that the first four days of Operation Ellamy cost £28.5 million (approximately $45.5 million).[61] Chancellor George Osborne has stated that the government plans to pay for the operation out of treasury reserves, rather than the main defense budget.

Other Participating NATO Member States

While the U.S., French, and UK militaries have had the clear lead in conducting military operations in Libya thus far, a number of other NATO member states have also begun to participate in the mission.

Italy has provided seven of its airbases for the use of coalition aircraft conducting operations in Libya, and eight Italian combat aircraft (four Tornados and four F-16s) have participated in enforcing the no-fly zone.[62] Libya is a former Italian colony, and the two countries have maintained extensive economic and political ties. In addition, Italy has had serious concerns about a potential influx of large numbers of refugees fleeing instability in Libya and other North African countries. Italy was initially reluctant to take action against Qadhafi's forces—on the third day of operations, Foreign Minister Franco Frattini asserted that "It shouldn't be a war on Libya," that operations must not go beyond implementing UNSCR 1973, and that the coordination should be transferred to NATO as soon as possible.[63]

Canada has committed six CF-18s to help enforce the no-fly zone, as well as two tanker aircraft, two reconnaissance aircraft, and a frigate. The Canadian F-18s reportedly conducted an airstrike on a target near Misrata on March 22.[64] Spain has deployed four F-18s to enforce the no-fly zone and reportedly has one frigate and a submarine in the area of operations. Belgium and Denmark have each committed six F-16s, which have begun taking part in enforcing the no-fly zone.[65]

[60] See the UK Ministry of Defence's online suite of resources about Operation Ellamy, http://www.mod.uk/DefenceInternet/DefenceNews/InDepth/LibyaOperationEllamy.htm. See also http://www.defense-aerospace.com/articles-view/release/3/123815/raf-typhoons-join-libyan-no_fly-zone-patrols.html.

[61] Thomas Harding, "Libya: Navy running short of Tomahawk missiles," *The Daily Telegraph*, March 23, 2011. The article estimates the cost of operating four Tornados and three Eurofighters plus support aircraft at over £3.2 million per day (approximately $5.1 million), plus £1.1 million per Storm Shadow missile (approximately $1.75 million) and £800,000 (approximately $1.3 million) per Tomahawk missile.

[62] The Italian airbases reportedly opened to coalition use are Amendola, Gioia del Colle, Sigonella, Aviano, Trapani, and Decimomannu. Italy also hosts an important NATO headquarters, Joint Force Command Naples.

[63] "Libyan Operation 'Must Not Be War, Says Italy," ANSA, March 21, 2011; "Italy 'Suppresses Enemy Defences' in Libya: Military," AFP, March 21, 2011; "Europe Divided Over Allied Campaign in Libya" AFP, March 21, 2011.

[64] "Canadian patrol planes to join Libya mission," *CBC News*, March 24, 2011.

[65] Carina O'Reilly, "Belgium to Send Troops to Join Libyan Intervention," IHS Global Insight Daily Analysis, March 21, 2011; Belgian Ministry of Defense, "*Vier F-16s in Libië*," March 22, 2011, http://www.mil.be; articles from *The Copenhagen Post* accessed on http://www.denmark.dk, "Libya blames Denmark for attack, No bombs from Danish jets (continued...)

Norway has also deployed six F-16s but has held them on Crete pending clarification of the mission chain of command and rules of engagement.[66] Luxembourg and (non-NATO member) Sweden have reportedly indicated they might commit forces under a NATO umbrella.

Non-NATO Coalition Partners

International concern about the conflict in Libya is shared and in many senses amplified within regional bodies such as the Arab League and the African Union, of which Libya and its neighbors are members. The United States, the European Union, and other parties have looked to regional actors as they seek to gauge the political ramifications of potential policy options, including the current military operations.

Qatar has deployed six Mirage fighter aircraft and two C-17A aircraft for the no-fly zone and relief operations. Qatari fighter aircraft are now participating in no-fly zone patrols from Souda Bay, Crete. The United Arab Emirates has pledged six F-16 and six Mirage fighter aircraft for the no-fly zone operation. Jordan and Morocco reportedly plan to provide non-combat support to coalition operations.

Issues for Congress

What Is the Role of Congressional Authorization?[67]

Some comments from Members of Congress regarding Operation Odyssey Dawn have addressed the question of congressional authorization—whether and when there is a need for congressional approval based on the War Powers Resolution for a no-fly zone or other operations in and around Libya. The question of whether and how congressional authorization is sought for a proposed operation could have an impact on congressional support—including policy, funding, and outreach to the American people—for the operation.

On November 7, 1973, Congress passed the War Powers Resolution, P.L. 93-148, over the veto of President Nixon. The War Powers Resolution (WPR) states that the President's powers as Commander in Chief to introduce U.S. forces into hostilities or imminent hostilities can only be exercised pursuant to (1) a declaration of war; (2) specific statutory authorization; or (3) a national emergency created by an attack on the United States or its forces. It requires the President in every possible instance to consult with Congress before introducing American armed forces into hostilities or imminent hostilities unless there has been a declaration of war or other specific congressional authorization. It also requires the President to report to Congress any introduction of forces into hostilities or imminent hostilities, Section 4(a)(1); into foreign territory while equipped for combat, Section 4(a)(2); or in numbers which substantially enlarge U.S. forces equipped for combat already in a foreign nation, Section 4(a)(3). Once a report is submitted "or required to be submitted" under Section 4(a)(1), Congress must authorize the use of force within

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in Libya, and F-16s readied to defend Libyan people," March 22, 2011.

[66] "Norway wants command decision before starting Libya ops," *AFP*, March 21, 2011.

[67] This section was prepared by Richard Grimmett, Specialist in International Security.

60 to 90 days or the forces must be withdrawn. Since the War Powers Resolution's enactment in 1973, every President has taken the position that this statute is an unconstitutional infringement by the Congress on the President's authority as Commander in Chief. The courts have not directly addressed this question, even though lawsuits have been filed relating to the War Powers Resolution and its constitutionality.

Some recent operations—in particular U.S. participation in North Atlantic Treaty Organization (NATO) military operations in Kosovo, and in UN-authorized operations in Bosnia and Herzegovina, in the 1990s—have raised questions concerning whether NATO operations and/or UN-authorized operations are exempt from the requirements of the War Powers Resolution.

Regarding NATO operations, Article 11 of the North Atlantic Treaty states that its provisions are to be carried out by the parties "in accordance with their respective constitutional processes," implying that NATO Treaty commitments do not override U.S. constitutional provisions regarding the role of Congress in determining the extent of U.S. participation in NATO missions. Section 8(a) of the War Powers Resolution states specifically that authority to introduce U.S. forces into hostilities is not to be inferred from any treaty, ratified before or after 1973, unless implementing legislation specifically authorizes such introduction and says it is intended to constitute an authorization within the meaning of the War Powers Resolution.

Regarding UN-authorized operations, for "Chapter VII" operations, undertaken in accordance with Articles 42 and 43 of the UN Charter, Section 6 of the U.N. Participation Act, P.L. 79-264, as amended, authorizes the President to negotiate special agreements with the UN Security Council, subject to the approval of Congress, providing for the numbers and types of armed forces and facilities to be made available to the Security Council. Once the agreements have been concluded, the law states, further congressional authorization is not necessary. To date, no such agreements have been concluded.

Given these provisions of U.S. law, and the history of disagreements between the President and the Congress over Presidential authority to introduce U.S. military personnel into hostilities in the absence of prior congressional authorization for such actions, it seems likely that a Presidential effort to establish a "no-fly zone" on his own authority would be controversial. Controversy would be all the more likely if the President were to undertake action "pre-emptively" or in the absence of a direct military threat to the United States.

Since the War Powers Resolution gives the President the authority to launch U.S. military actions prior to receiving an authorization from the Congress for 60-90 days, it is possible that the President could direct U.S. armed forces to take or support military actions in accordance with U.N. Security Council Resolutions, or in support of NATO operations, and then seek statutory authority for such actions from the Congress.

Costs[68]

According to the Department of Defense, U.S. military operations in Libya have cost about $550 million through March 28, 2011, not including replacement of an F-15E aircraft that was lost during a mission. Of the total, about $340 million is for munitions, mainly Tactical Land Attack

[68] This section was prepared by Stephen Daggett, Specialist in Defense Policy and Budgets, and Amy Belasco, Specialist in U.S. Defense Policy and Budget.

Cruise Missiles (TLAMs). The Defense Department expects that operations in the following three weeks through April 16 could cost about $40 million more, or a weekly average of about $13 million. DOD also projects that continuing operations will cost about $40 million a month thereafter, without significant munitions costs, though it acknowledges that future costs are highly uncertain.[69]

These figures suggest that DOD expects that weekly costs could decline from about $55 million for the first ten days of operation to $13 million in the next few weeks to about $10 million a week after that with much of the difference presumably reflecting lower operating tempo and lower costs for additional munitions.

At that rate of expenditures, DOD estimates that the total incremental cost—i.e. expenses over and above the normal costs of day-to-day activities—of Libya-related operations could reach about $800 million during FY2011. The Defense Department expects to cover the added operational costs temporarily, at least, through "cash flowing," which involves reallocating funds originally intended for other purposes within the defense budget. Operation and maintenance funding that might have gone for training, for example, will instead be used to pay for an increase in the number of aircraft flying hours.[70] The munitions expended are being drawn from current inventories, which may not be replenished immediately.

A key question about DOD cost estimates has to do with the ongoing nature of the mission. U.S. costs of continued enforcement of a no-fly zone might be quite limited, since Libyan air operations appear to have ceased. U.S. expenses for maintaining a no-fly zone would be further constrained if allies carry out most of the ongoing flight operations. U.S. contributions might then be restricted to providing surveillance and air traffic control capabilities with Airborne Warning and Control System (AWACS) aircraft, for example, supplemented by other intelligence and communications activities and maintenance of reserve forces for additional missions. Even some of those capabilities could come from allies—NATO has AWACS aircraft as well. Moreover, many of the capabilities the United States would contribute under those circumstances are normally on station in the Mediterranean or nearby, so the incremental costs—i.e., expenses over and above normal operating costs—might be limited to begin with.

Conversely, U.S. costs might climb to the extent the mission involves continuing attacks on ground targets. In that case, U.S. strike aircraft might be preferred over allied forces, particularly because of extensive U.S. experience in recent conflicts and the precision strike capabilities of U.S. forces. U.S. forces have been using the Global Hawk unpiloted air vehicle (UAV) for ground surveillance. Additional U.S. surveillance, command, and control assets, such as Joint Surveillance and Target Attack Radar System (JSTARS) aircraft, might also be assigned to the mission. Continued attack missions might also put U.S. forces at greater risk, with losses of aircraft possible.

[69] DOD, "Talking points for meetings with congressional staffers," March 28, 2011.

[70] Paying for the added operating costs may require some transfers of funds from one budget account to another, which would require approval by the congressional defense committees. With the Defense Department currently operating under a continuing resolution that generally sets funding at the FY2010 level, some accounts, particularly for operation and maintenance, may be quite tight, so added operating costs may require shifts of funds quite soon. There have, however, been some questions about the availability of authority to transfer funds between accounts. The FY2010 defense appropriations act, as amended, provides $4.5 billion of general transfer authority, but there have been some questions about whether this authority carries over into FY2011.

Historical Costs as a Guide

As a very rough guide to the range of possible costs, **Table 2** shows the costs to the U.S. Government of a variety of air operations from FY1991 to FY2003. Of these, Operation Noble Anvil, the air war in Yugoslavia designed to contain a conflict in Kosovo, was the most intense. It involved initially limited and later extensive attacks to degrade air defenses throughout the Federal Republic of Yugoslavia, including all of Serbia. Those were followed by escalating air attacks initially focused on the military infrastructure and later on strategic targets. The operation lasted for two and a half months, from March 24 through June 10, 1999. The operation—including the no-fly zone and extensive additional activities—cost a total of $1.8 billion.

Toward the lower end of the spectrum are costs of the two no-fly zone operations in Iraq. The costs to the U.S. Government of Operation Southern Watch (OSW) averaged somewhat more than $700 million per year, or $60 million a month, although the amounts varied substantially from year to year. Costs of Operation Northern Watch (ONW) averaged about $123 million a year, or $10 million a month. The OSW mission required coverage of a relatively large geographic area, punctuated by occasional strikes against Iraqi air defense sites. U.S. aircraft were not necessarily always in the air, however, since they were based close to Iraqi airspace. The operation imposed a considerable burden on U.S. Air Force units, mainly because of its long duration.

Perhaps in the middle of the spectrum, at least in cost, are air operations in Bosnia-Herzegovina in the mid-1990s. Operation Joint Endeavor, carried out under the auspices of the Implementation Force (IFOR) from December 1995 to December 1996, involved a similar range of air operations as the current mission in Libya. Air operations included enforcement of a no-fly zone, attacks on Bosnian-Serb military forces, and close air support for Croatian ground operations. The combination of air and ground operations ultimately may have helped shift the balance of power in Bosnia enough to foster a political settlement. Air Force and Navy costs (though not entirely limited to air operations), totaled $298 million in FY1995 and $446 million in FY1996. IFOR operations continued for only the first three months of FY1996, so air operation costs appear quite substantial.

Whether the costs of these earlier operations provide a reasonable basis of comparison with current costs is uncertain. Inflation in itself would increase costs by about 50%. Current costs for comparable operations may also be higher today. Military personnel today are about 50% more expensive, after adjusting for inflation, than in the late 1990s, and operation and maintenance costs have also grown by about 50% above inflation over the past 15 years.

Costs of Initial Libyan Operations

According to recent DOD figures released to congressional staffers, the cost of initial operations to suppress Libyan air defenses, protect civilians, and establish a no-fly zone through March 28, 2011, were $550 million, and could reach $800 million if operations continued through September 30, 2011, the end of the fiscal year (see above). Earlier press reports cited a recent study by the Center for Strategic and Budgetary Assessments which estimated the cost of initial operations and the cost of establishing and continuing a no-fly zone using various top-down methods and historical costs.[71] This study estimates that initial operations could run between $500

[71] National Journal, Daily PM Update, March 21, 2011 by Megan Scully;

(continued...)

million and $1 billion, based on attacks on some 250 to 500 targets, and that the ongoing cost of a no-fly zone could range from $15 million to $300 million a week depending on the area of Libya that would be covered.[72]

Using operational details provided by DOD and DOD cost factors, a "bottoms-up" estimate of the cost of initial operations suggests that in the first 10 days of operations, DOD spent roughly $440 million. This estimate reflects operational details provided in DOD press briefing, which may not capture full costs. Like DOD's estimate, the bulk of these costs reflect potential replacement costs for the Tomahawk missiles launched from Navy ships and the Joint Direct Attack Munitions (JDAMs) dropped by B-2 bombers at the beginning of the operation to suppress Libyan air defenses (about $285 million). The estimate in **Table 1** also shows the potential cost of replacing the F-15E strike fighter aircraft lost over Libya because of mechanical failures ($75 million replacement cost), which DOD does not count in its estimate.

Together, these hardware costs for the aircraft and munitions could total about $360 million, or about 85% of the estimated total, with munitions expended alone accounting for 70% of the total (see **Table 1**). Unless Libya is able to reconstitute its air defense network and airfields, daily munitions costs are likely to decline sharply. Further, on March 30, 2011, allied countries assumed full operation of the combat air patrol portion of Libya operations, further reducing U.S. expenses.

DOD may or may not request additional funds to replace this hardware. It is not clear whether either the F-15 lost or all of the Tomahawk missiles expended would qualify as war-related expenses. Since 2009, DOD has been following new criteria for war-related funding, which prohibit requests for procurement items which are already scheduled for replacement.[73] The Air Force expects to replace F-15E fighter aircraft with Joint Strike Fighters and some of the Tomahawk missiles used were of an older variant which is being replaced with a new version. The Navy may not need to replace all those expended, as some of the missiles used were of the older variant that is currently being replaced. The Navy is currently buying some 196 new Tomahawk missiles to expand the size of its current inventory.[74] "[T]he Tomahawks will be replaced from the existing inventory, [Chief of Naval Operations Admiral Gary] Roughead said. More than 3,200 Tomahawks are in the inventory, and the missiles used in the operation represent 'relatively minor increases in cost,' he added."[75]

If the Administration does not request a supplemental, DOD could re-direct funds for some or all Libya-related hardware costs from another internal source, as is done each year in reprogrammings or transfers submitted to the four congressional defense committees by which

(...continued)

http://www.nationaljournal.com/nationalsecurity/costs-of-libya-operation-already-piling-up-20110321?page=2.

[72] Center for Strategic and Budgetary Assessments, "Selected Options and Costs for a No-Fly Zone over Libya," by Todd Harrison & Zack Cooper, March 2011, p. 4 and p.7; http://www.csbaonline.org/wp-content/uploads/2011/03/2011.03.09-Libya-No-Fly-Zone.pdf.

[73] OMB, "Criteria for War/Overseas Contingency Operations Funding Request," February 26, 2009. The relevant language is "Replacement only of items not already scheduled for replacement in the Future Years Defense Plan – no accelerations; " and "Replacement of munitions expended in theater if existing stocks are inadequate."

[74] Department of the Navy, FY2012 Budget Estimates, Weapons Procurement, Navy; see Exhibit P-40 Exhibit, p. 20; http://www.finance.hq.navy.mil/FMB/12pres/WPN_BOOK.PDF.

[75] Jim Garamone, "Ships Were in Position for Odyssey Dawn, Roughead Says ," *American Forces Press Service*, March 23, 2011.

DOD moves funds from less- to more-urgent needs. Typically, DOD reprograms several billion dollars each year. Alternatively, DOD could accept temporarily reduced inventory levels for munitions until the delivery of new procurements, or permanently reduced inventory levels without requesting replacement weapons.

Although DOD could request about $75 million to replace the lost F-15E, the Air Force budget includes funds each year for attrition in its aircraft inventory, which may already cover that cost.

Table 1. Estimated Costs of Libyan Operations, March 19-March 28, 2011

OPERATIONAL COSTS			
	Flying Hours[a]	Cost per flying hour	Estimated Cost in millions of $
Initial Suppression of Air Defenses			
B-2 bomber aircraft	75	31,236	2.3
Refueling support	84	9,031	0.8
Ongoing Combat Air Patrols and Strike Operations			
F-15Es	580	19,568	11.3
F-16s	580	8,926	5.2
Support Sorties			
EA-18G Growler electronic warfare	249	18,334	4.6
KC-135 refueling support	812	11,462	9.3
E-3 AWACS and E-8 JSTARS Intelligence, Surveillance and Reconnaissance (ISR)	84	18,648	1.6
EC-130J Commando Solo information operations/psychological operations	98	6,982	0.7
Search and Rescue Support	481	5,659	2.7
One-time Rescue Operation for F-15 lost			
Harriers, CH-53 helicopters, MV-22s, and KC-130J	10	Not applicable	0.1
SUBTOTAL OPERATIONAL COSTS	2,894	Not applicable	38.6
POTENTIAL MILITARY PERSONNEL COSTS			
	No. Eligible	Monthly Amount	Total
Imminent Danger Pay[b]	15,000	225	0.8
SUBTOTAL MILITARY PERSONNEL	15,000	225	0.8
POTENTIAL REPLACEMENT COSTS[c]			
Investment Costs	No. Expended	Cost per aircraft/missile	Estimated Cost
Replacing Tomahawk missiles	184	1,400	257.6
Replacing JDAM missiles	45	35,000	1.6
Replacement cost of lost F-15E	1	75,000,000	75.0
SUBTOTAL REPLACEMENT	Not applicable	Not applicable	334.2
TOTAL POTENTIAL COST			373.6

Sources: Department of Defense, operational briefings including slides from March 19. 2011 through March 24, 2011. For total, and split between strike and support flying hours, and number of Tomahawks expended, CRS used slides in March 27, 2011 briefing; for flying hour cost by type of aircraft, used Air Force regulation A15-1; and proxies for Navy aircraft. For potential cost of replacing Tomahawks, used FY2012 Department of the Navy, Budget Justification, Weapons Procurement, Navy.

a. Flying hours estimated by number of sorties and length per sortie.

b. The amount of Imminent Danger Pay depends on how the Department of Defense defines the Area of Responsibility (AOR) for Libyan operations. This estimate uses a rough estimate of the number of service members participating in the operation who are stationed on ships in the Mediterranean as well as those flying B-2 bombers from the United States; personnel contributing by providing command and control from home stations would not be included. Imminent danger pay is $250 additional per month but is pro-rated.

c. Since 2009, the policy for defining war-related costs has been tightened, including a requirement that DOD cannot request replacement of combat losses for items that are already scheduled for replacement. This could eliminate the request for a replacement for the F-15 aircraft lost and reduce the number of see OMB, "Criteria for War/Overseas Contingency Operations Funding Request," February 26, 2009.

After the costs of munitions, the remaining $75 million, or about 15% of the total, are operational or military personnel costs for conducting combat air patrols and strike missions using F-15E, F-16, and AV-8B fighter aircraft, along with their support aircraft (e.g., tankers for refueling, electronic warfare support, and search and rescue aircraft.)[76] Most of the operational costs are being paid for out of the Air Force's FY2011 Operations & Maintenance (O&M) account, which includes some $21.0 billion dedicated to training for combat operations and related support.[77] CRS does not assume any additional Navy ship operating costs because the Navy ordinarily keeps ships in the Mediterranean. The Navy reportedly agrees:

> According to [Chief of Naval Operations Admiral Gary] Roughead, the operations to date have not been particularly costly.
>
> "When you look at the expenses of what we in the Navy incurred, given the fact that we were already there, those costs are 'sunk' for me," he said. "I'm already paying for that."
>
> Thus far, expenses include additional flying hours and Tomahawk missiles used in the strikes, the admiral said.[78]

DOD may decide that some of these costs are incremental—or additional to the Navy's normal presence missions, which could account for some of the difference in estimates.

Projecting future costs based on current operational costs could be problematic because costs to date reflect the high operating tempo of initial operations to neutralize Libyan air defenses, and are unlikely to be repeated now that the no-fly zone is in place. The United States has negotiated arrangements by which allies are assuming the bulk of coalition operations to maintain a no-fly zone with the U.S. confining its contribution to maintaining air surveillance with AWACS and other aircraft, which would reduce costs substantially.

[76] This estimate is lower than DOD's estimate of $210 million for reasons that are not evident (see above).

[77] Department of the Air Force, *Fiscal Year (FY) 2012 Budget Justification, Operation and Maintenance*, Exhibit O-1P, p. 10, see Budget Activity 1; http://www.saffm.hq.af.mil/shared/media/document/AFD-110210-042.pdf.

[78] Marina Malenic, "Navy EW Plane Makes Combat Debut Over Libya," *Defense Daily*, March 24, 2011.

Table 2. Costs of Selected U.S. Combat Air Operations, FY1993-FY2003

(amounts in millions of current year dollars)

	FY1993	FY1994	FY1995	FY1996	FY1997	FY1998	FY1999	FY2000	FY2001	FY2002	FY2003
Southwest Asia											
Provide Comfort/Northern Watch	116.6	91..8	138.2	88..9	93.1	136.0	156.4	143.7	138.7	952.1	923.1
Southern Watch	715.9	333.0	468.4	576.3	597.3	1,497.2	933.2	755.4	678.0		
Desert Fox (Air Strikes, Dec. 1998)							92.9				
Former Yugoslavia (Bosnia)											
IFOR/SFOR/Joint-Deliberate Forge, Air Force & Navy		237.6	298.0	446.0	327.2						
Former Yugoslavia (Kosovo)											
Balkan Calm (Observer Mission, Pre-War)							34.6				
Eagle Eye (Air Verification, 10/98-3/99)							20.3				
Noble Anvil (Air War, 3/24-6/10/99							1,775.7				

Source: CRS based on data provided by Department of Defense, Office of the Under Secretary of Defense Comptroller.

Other Issues for Congress

Other questions Congress may address include:

- What are the United States' strategic objectives in Libya?
- Who are the anti-Qadhafi forces? Is their success in the United States' national interest?
- Has Operation Odyssey Dawn directly or indirectly helped the anti-Qadhafi forces?
- How well did coalition coordination work, particularly given the short time available between the passage of UNSCR 1973 and the initiation of operations?
- What are the possible alternative political outcomes in Libya, and to what extent have military operations shaped those possibilities?
- Should the Department of Defense request supplemental funding to cover the costs of Libyan operations, or should that be paid for from existing funds?

Additional CRS Reports

CRS Report RL31133, *Declarations of War and Authorizations for the Use of Military Force: Historical Background and Legal Implications*, by Jennifer K. Elsea and Richard F. Grimmett.

CRS Report R41701, *No-Fly Zones: Strategic, Operational, and Legal Considerations for Congress*, coordinated by Jeremiah Gertler

CRS Report R41199, *The War Powers Resolution: After Thirty-Six Years*, by Richard F. Grimmett.

CRS Report RS20775, *Congressional Use of Funding Cutoffs Since 1970 Involving U.S. Military Forces and Overseas Deployments*, by Richard F. Grimmett.

CRS Report RS21311, *U.S. Use of Preemptive Military Force*, by Richard F. Grimmett.

CRS Report RL33142, *Libya: Unrest and U.S. Policy*, by Christopher M. Blanchard.

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